



PROBLEMS AND RISKS OF COMMERCIALIZATION OF INNOVATIONS IN THE RUSSIAN ECONOMY

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Abstract: According to statistical data, modern development of the innovation activity in Russia has positive trends – Russia's positions in the Global Innovation Index have improved, the relative share of the organisations engaged in innovation has increased and the volume of shipped innovative products has gone up in the total volume of exports. However, even these positive trends are not enough to bridge the gap between Russia and the developed countries. The problems of low effectiveness of innovation in Russia, according to the authors, are related to the problems and risks that arise in enterprises that commercialize innovation.

The process of commercialisation of innovation has its own specifics and depending on the degree of participation of the innovation developers in it, it could be realised through three different methods – independent use, partial assignment of rights to use innovations, full transfer of rights to use it. The problems and risks which the enterprises may face in the process of commercializing innovations, are presented by the authors in relation to each

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PROBLEMS AND RISKS OF COMMERCIALIZATION ...

method. The article also features some authors' proposals for speeding up the innovation implementation by enterprises.

Key words: innovations, commercialization of innovation, risks of innovation activity.

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Most experts believe, not without reason, that in the basis of the sustainable and dynamic development of business in contemporary conditions, the most important factor which allows to maintain and continually increase the competitive advantages, is the active innovation activity, the constant updating of the manufactured product and that of the technologies used. According to 2016 data, Russia ranks 43rd in the Global Innovation Index (GII) (Global Innovation Index, 2017). Even though compared to 2015 there is an upward movement of five positions, this growth clearly is not enough and the considerable lagging behind the developed countries remains. The positions of the Russian developers of innovation products in the world are too modest, where they have less than 1% of the total world production of innovative products and services. These low indexes give reason to the experts to refer Russia to the countries with 'decreasing innovative potential'.

According to the experts from the Institute for Statistical Studies and Economics of Knowledge of the Higher School of Economics, over the last six years Russia has maintained stable positions both amongst the 35 leading European countries and amongst the 50 states with high level of income according to the GII ranking. Maintaining stable positions as a whole, over recent years (Table 1) there has been a fluctuation of the indexes, characterising the innovation resources and the results of innovations, while maintaining the positive dynamics of the index as a whole (Lohberg, L., Rud, V. 2017).

Table 1.
Global Innovation Index

Year	Innovation resources	Innovation results	Efficiency of innovations	Global innovation index
2014	56	45	49	49
2015	52	49	60	48
2016	44	47	69	43

If we take a look at innovation statistics, according to Rosstat data the relative share of Russian enterprises engaged in technological, organizational and marketing innovation in 2015 is 9,3%, which is a little lower than the 2011 level (10,8%). Positive dynamics is observed only in the technological innovations, where there is an increase in the number of enterprises which are engaged in them, as well as growth in the share of expenses for this type of innovations. Over the last few years the volumes of shipped innovative products have increased: while in 2010 their share in the total volume of exports by industrial enterprises was 4,8%, in 2015 this index reached 8,4% (Statistical data from the Federal State Statistics Service, 2017). However, as was mentioned above, even with the noticeable positive trends Russia cannot keep up with the developed countries for the time being and become one of the world leaders in innovation development.

According to the experts the key problem for Russia is the missing link between science (scientists) and enterprises. It is obvious that the lack of reliable and efficient connections at this stage of the innovation process considerably affects the level of efficiency of innovations. Another significant factor is also the commercialisation of innovations, whose level is not high at the moment.

As is well-known, the commercialization of innovations is actually the process of their distribution in the economic system. According to the theory of innovation of J. Schumpeter (Schumpeter, 2008), the diffusion (distribution) of innovation is a process of cumulative increase in the number of imitators (followers) implementing the innovations after the innovator with the

PROBLEMS AND RISKS OF COMMERCIALIZATION ...

hope of a bigger profit. The meaning of innovation is that its use allows getting additional benefits and advantages. Whereas the utility and value of what is done in a market economy is valued only by the market. Innovation which has not reached the market, the end user, has no practical value. It is the commercialization of innovation that helps innovations to spring up on a wider scale, thus giving its developers and users additional advantages.

One of the participants in the process of commercialization of innovation are industrial enterprises which can be developers of innovations, users, as well as investors; sometimes the enterprise is a developer and a user at the same time.

As a rule, industrial enterprises, developing innovations, are large business entities, which have research and development subdivisions and small innovative businesses in their structure. In this case the enterprises develop innovation projects themselves, for which the directions and ways of commercialization are subsequently determined. If the enterprise developing innovations, has the possibility to materialise this innovation into goods and services, which does not happen that often, this could potentially considerably solidify the positions of this manufacturer.

The advantages of the independent use of innovations are obvious for the enterprise: the enterprise has the possibility to fully dispose of its innovation and to control its manufacturing. Under a successful organization of the production the enterprise could take up new market positions, which promises high incomes, yet only in a medium-term perspective.

However, with this method of commercialization of innovation enterprises risk the most. It is solely the responsibility of the enterprises to distribute the innovation on the market and sometimes it is quite difficult to estimate the possible effective demand. Even with accurate management performance and efficient organization of production the final result of commercialization depends on the market situation, on the solvent demand of the potential customer, which in turn is determined by such factors like the economic situation, the user's resources, the

degree of the principle differences of the innovation and its previous versions, etc.

In Russian conditions, where potential users are often not interested in any innovation, the economic situation is quite unfavourable, and even in the case when the need of innovation is acknowledged, the majority of stakeholders encounter problems related to the demand for the necessary resources, above all financial ones, and moreover, the risks from independent commercialization of innovations increase considerably.

In terms of the problems arising with the independent commercialization of innovation, we should take into consideration above all the problem of assessment of the commercial value of the innovation (Mokridin, 2017). In most Russian enterprises, the management system is based on cost management. Thus, the assessment of innovations according to the managers is an expense account for realization of the separate stages of the innovation activity. The difficulty in making this account, however, relates to the need to take into consideration the factors of uncertainty, as well as the need for a quick adaptation to the possible changes and unplanned circumstances.

Modern management concepts suggest management according to the results, which in the case of assessment of innovation suggests its assessment from the viewpoint of its potential attractiveness – degree of distribution, determining of the planned sales volumes and profit. To make such an assessment is a complicated task not only for experts, but also for the organisations engaged in such services.

The inability to assess the commercial potential not only creates problems in the enterprise, but it also repels the potential investors, which leads to the following problem characteristic especially for product innovation.

Scientists and inventors are not familiar with the possible types of contracts, the ways to protect their rights, as well as their future responsibilities. All this gives rise to suspicion and fear

PROBLEMS AND RISKS OF COMMERCIALIZATION ...

among them that the entrepreneurs are trying to deceive them by illegally obtaining information from them about the developments.

The problem with resource provision is important. The lack, the inaccessibility, as well as the insufficiency of equipment, technologies and inventory can create serious obstacles to the commercialization of innovation. The issues of resource provision can be connected firstly to the lack of equipment, technologies and materials, necessary for the realization of the fundamental developments, not only in Russia but in the world as a whole; secondly, to the inaccessibility of the production resources due to the lack of or insufficient funding; thirdly, complications are possible with the provisioning of the innovation process, related to the specifics of the legislation and policies of the state in the field of substitution of import (for example, a ban on the import of foreign make telecommunication equipment).

Also, the issues related to the personnel potential should be attributed to the resource issues, which, undoubtedly is essential for the efficient commercialization of innovations. The transformation of the educational system in recent years causes serious problems connected with staffing: as a result of the lack of well-controlled interaction along the chain school-university-enterprise, the scientific and managerial staff, graduating from institutes of higher education and secondary vocational schools often do not meet the professional requirements of the innovation project, which determines the need to seek and attract external organizations and specialists. In this respect, there is a risk of not providing labour resources for the realization of the project due to inadequacy of the qualification or lack of funds for payment for the external organizations or contractors.

The problem with financial provision is so big that it must be regarded separately. The underdeveloped private funding, the weak interest of investors (both Russian and foreign ones) as a result of the low investment attractiveness determine this fact that the main source for financing innovation in the enterprise so far is its own (and very limited) resources, while the role of private investments is

incredibly small. The implementation and realization of full-scale innovation projects in such circumstances is very problematic.

Lastly, the problems related to commercialization using own resources could arise due to obstacles of legislative and administrative nature. Among them, for example, we can attribute the impossibility for timely supply of unique raw materials; the impossibility of replacement of equipment within the framework of acceptable conditions for the project, which is not manufactured on the territory of RF.

Thus, we can conclude that the main problem of the first method of commercialization of innovation is the need to look for different types of resources with given high future financial and entrepreneurial risks.

A less risky method than the independent one is commercialization of innovation by partial assignment of the rights on it, which can be realized by sale of license, franchising, transfer of trade secrets. This method of commercialization requires considerably lower costs by keeping the possibility for receiving higher revenues, especially in the cases when the enterprise can form its own stock character.

With this method of commercialization in most cases the potential partners to whom the innovation developers present their project and who must decide about their participation in the project, do not have the necessary knowledge. Very often they are not interested in the nature of the innovation. They are more interested in the possible market volume and that of the innovation offered, the revenue or profit from its commercialization. This is why it is important to be able to explain the advantages of the innovation in comparison with those of the goods that are already on the market, as well as with those that can potentially appear in the near future. When reviewing the innovation, the quantitative parameters are compared, which is quite visual, or the qualitative. Qualitative parameters are often descriptive; as a rule, they are less convincing for the potential partner but we must resort to them.

PROBLEMS AND RISKS OF COMMERCIALIZATION ...

The enterprise which partially assigns its rights on its innovation, imposes itself on the market at the expense of the other companies. Here the risks are distributed among the large number of stakeholders in the process of commercialization. For the enterprise which developed the innovation, in comparison with the independent method, there is a risk of infringing the patent rights, risk of fake products, etc.

Thus, by reducing the problems connected with the resource provision, the problems with determining and organizing the innovative connections increase, transaction costs arise and then go up. In terms of risks, there will always be such, only their nature changes.

The third option for commercialization of innovation for the developing enterprise is the full transfer of rights on the innovation. In this case the problem lies solely in the search for parties that are interested in the realization of the innovation. The expenses of the enterprise developing innovations reduce significantly and the risk becomes minimal.

In the meantime, we must point out that all enterprises operating in the manufacturing and service business face similar risks and problems related to the search for and efficient use of resources.

Regardless of the existing risks and problems of commercialization, their realization is necessary for maintaining the high level of development of each enterprise and providing for the competitiveness of the production on the world markets.

In order to speed up the implementation of innovation, according to us, a number of measures of a stimulating nature must be taken:

- establishing a normative base of the process of commercialization of innovation;

The given measure will allow this process to be precisely regulated, will ensure transparency of the procedures and protection of interests of the investors and of all parties engaged in it.

- diversification of innovative processes, strengthening the links between enterprises, universities and research, as well as between researchers and innovation developers;

The diversification of innovative processes is considered from the viewpoint of the need to attract a larger number of stakeholders capable of carrying out separate tasks within the framework of the project, which will help speed up commercialization and improve its quality and efficiency.

- creating of effective mechanisms for state support – both from the point of view of allocating funds to finance innovation activity and from the point of view of creating favourable conditions for financing of the innovative developments and support of the enterprises that distribute the innovative production and realize it on the market.

In order for the state's activity in maintaining and developing the innovation activity of the enterprises to be effective, the following conditions are necessary: monitoring on spending funds, implementation of methodology for determining the quality of the used and offered resources and the mechanisms for adaptation of state support to the conditions of the environment.

As incentives for investors it is possible to use tax incentives, the formation of co-financing mechanisms or state guarantees.

- creating favourable conditions for work of highly-qualified personnel;

Examples of such favourable conditions for the work of highly-qualified personnel could be: obtaining housing, social guarantees, tax incentives and a number of other measures.

- study, adaptation and use of the world experience in innovation and that of the mechanisms of its maintenance and development;

The realization of the presented measures, according to us, will help to implement a large number of innovative projects and the adoption of new technologies, it will also allow for the available potential to be triggered and will lead to a significant growth in the level of commercialization of innovations and an increase in their efficiency.

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CONTENTS

MARKETING

**THE IMPACT OF THE BRAND IN ACHIEVING COMPETITIVE
ADVANTAGE:-AN ANALYTIC STUDY ON ZAIN IRAQ'S MOBILE
CELL-PHONE COMPANY IN AL-DIWANIYAH GOVERNORATE IN IRAQ**

Zaki Muhammad Abbas Bhaya

Basim Abbas Kraidy Jassmy 5

COMPANY competitiveness

**PROBLEMS AND RISKS OF COMMERCIALIZATION
OF INNOVATIONS IN THE RUSSIAN ECONOMY**

Prof. Nataliya Golovanova

Anna Bekaeva, PhD 28

INFORMATION AND COMMUNICATIONS technologies

**METHODS AND INSTRUMENTS FOR ENHANCING CLOUD
COMPUTING SECURITY IN SMALL AND MEDIUM
SIZED ENTERPRISES**

Assist. Prof. Angelin Lalev 38

BUSINESS practice

**ANALYSING THE FINANCIAL VARIABLES OF BULGARIAN
MUNICIPALITIES FOR THE PURPOSE OF THEIR FINANCIAL
RECOVERY**

Assist. Diyana Ivanova, PhD

Assist. Galya Kusheva, PhD 54

**A CONTEMPORARY OVERVIEW OF THE APPLICATION OF
COLLABORATIVE CONSUMPTION IN TOURISM**

Assoc. Prof. Petya Ivanova, PhD 73

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